

CLAIMS

What is claimed is:

1. A non-aqueous electrolyte secondary battery comprising a positive
 5 electrode which is configured by applying on a current collector a mixture
 which comprises:
 - a lithium-containing composite oxide having a hexagonal system
 structure, wherein Co is substituted for part of nickel atoms in the crystal
 lattice in a lithium-nickel composite oxide which is represented by a
 10 general equation, LiNiO_2 , (provided that the substitution percentage
 ranges from 5 % to 30 % of the number of nickel atoms in said
 lithium-nickel composite oxide) and, in addition, at least one element which
 is selected from a group consisting of Al, Mn, Ti, and Mg is substituted
 (provided that the substitution percentage is less than 20 % of the number
 15 of nickel atoms in said lithium-nickel composite oxide),
 a binder, and
 a conductive material;
 - wherein said lithium-containing composite oxide is characterized in
 that a half width of the (110)-plane-based diffraction peak obtained from
 20 powder X-ray diffraction method, in which $\text{CuK}\alpha$ line is used as
 characteristic X-ray, is larger than 0.13° and smaller than 0.20° and that
 the ratio of the (003)-plane-based diffraction peak intensity to the
 (104)-plane-based diffraction peak intensity is larger than 1.2 and smaller
 than 1.8.
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2. The non-aqueous electrolyte secondary battery according to claim
 1, wherein said lithium-containing composite oxide is represented by the
 general equation, $\text{Li}_w\text{Ni}_x\text{Co}_y\text{M}_z\text{O}_2$, (provided that M is at least one element
 which is selected from Al, Mn, Ti, or Mg, $0 < w \leq 1.2$, $0.95 \leq x+y+z \leq 1.05$,
 30 $0.5 \leq x \leq 0.9$, $0.05 \leq y \leq 0.3$, and $0 < z \leq 0.2$.)
3. The non-aqueous electrolyte secondary battery according to claim
 1, wherein said lithium-containing composite oxide is represented by the
 general equation, $\text{Li}_w\text{Ni}_x\text{Co}_y\text{Al}_z\text{O}_2$, (provided that $0 < w \leq 1.2$,
 35 $0.95 \leq x+y+z \leq 1.05$, $0.7 \leq x \leq 0.85$, $0.1 \leq y \leq 0.2$, and $0.01 < z \leq 0.1$.)